

Aviation Human Factors Industry News

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From the sands of Kitty Hawk, the tradition lives on.

Hello all,

To subscribe send an email to: rhughes@humanfactorsedu.com

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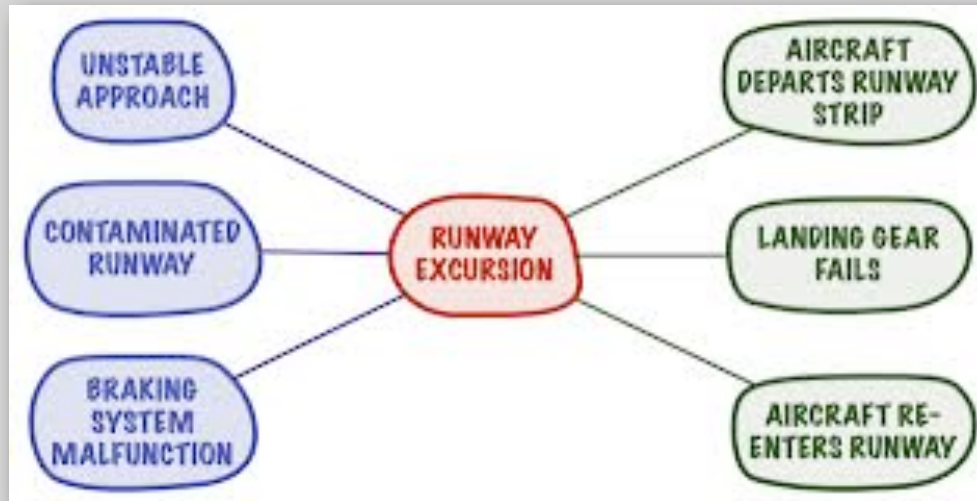
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European Group Studies Precursors to Runway Excursions

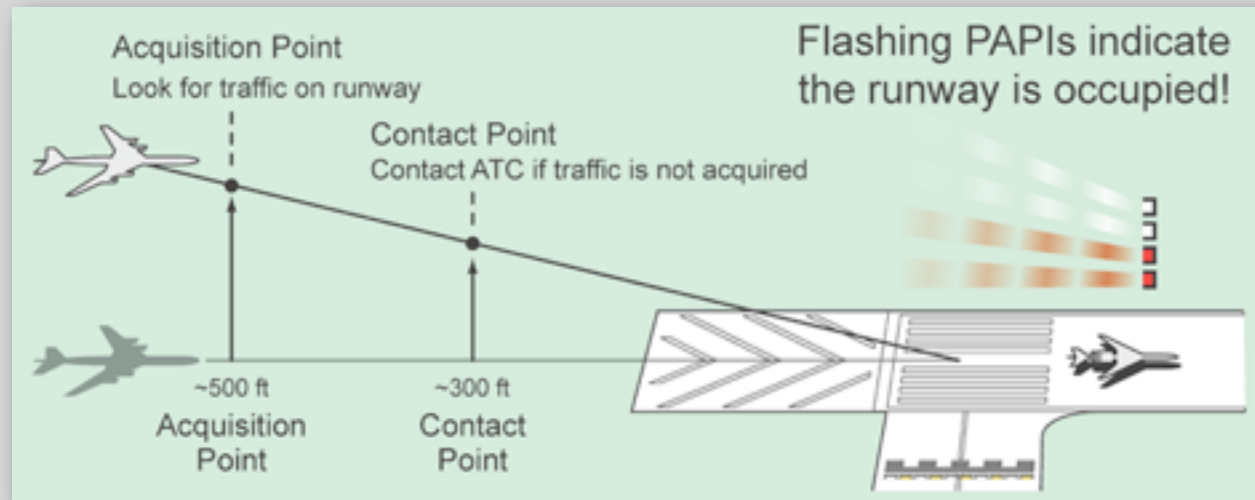


The European Operators Flight Data Monitoring Working Group B—part of the European commercial aviation safety team (ECast)—last week released its study into the [precursors of runway excursions](#). The objectives of the working study were to create [best practices](#) for addressing runway excursion problems, as well as to provide guidelines for implementing flight data monitoring (FDM) software tools to identify relevant data. The study also presents the algorithms proposed to potentially address each of the recommendations identified. Among the [31 excursion precursors](#) identified are bounced (mainwheels or nosewheels), off-center, nosewheel-first or asymmetrical landings; excessive threshold crossing height; and unstable approaches. The working group hopes to enlighten pilots on how to recognize and deal with these overrun precursors.

Initially, precursors were assigned a maturity level depending on how early in the program the precursor was identified. Each was also classified by phase of flight, from engine start to taxi in. Precursor identification also required [a quality assurance program](#) to provide insights about the overall quality of the precursor and used data such as the number of flights from any one operator, the aircraft type, sampling rate and issues encountered during implementation.

http://easa.europa.eu/essi/ecast/wp-content/uploads/2014/05/EOFDM_WGB_Runway_Excursions_ver20140331.pdf

New Runway Occupied Technology To Be Tested at Boston



Later this month, the FAA plans to begin testing a [new lighting system](#) at Boston Logan Airport that will warn arriving pilots when their runway is occupied by another aircraft. Called the enhanced final approach runway occupancy signal (eFaros), the new system flashes the existing precision approach path indicator lights to indicate the runway is not safe for landing long before the aircraft is committed to touchdown.

<http://www.efaros.org/>

Taxiing Too Fast At GA Airports Is Risky

by [John Goglia](#)

I write a lot about issues related to air carrier airports, but general aviation airports [play a critical role](#) in our aviation system. And safety at these airports is an important issue to focus on.

I was recently at a medium-sized GA airport in the southern part of the country frequented by a significant number of private jets, as well as single and twin engine aircraft.

The airport generally appeared to be in excellent condition, and I was enjoying my time watching aircraft take off and land and movement on the ramp.

Out of the corner of my eye, I was surprised to see a twin engine turboprop come speeding down the taxiway with the door open and stairs down. I couldn't

believe how close the aircraft was to the airport's perimeter fence and parked aircraft while maneuvering at such high speed. The speed alone would have been a concern. But the protruding stairs [added to the risk](#) of damage to the aircraft.

I can't be sure whether the aircraft was being taxied by a pilot, a mechanic or another ramp worker, as the aircraft sped quickly out of my field of vision. But one thing is certain – the speed was way in excess of what anyone would reasonably consider safe given the ramp congestion.

Moving aircraft too quickly is one of the [most common causes](#) of aircraft damage at general aviation airports, just as at air carrier ones.



[Crash report details flaws at Macon airport](#)

A federal NTSB report into a 2012 plane crash at the Herbert Smart Airport on Ocmulgee East Blvd. in Macon [details flaws](#) with the runway that may have contributed.

In September 2012, a plane being flown from Charleston hydroplaned while trying to land, and went past the runway, across the street, and into a ditch.

None of three passengers on board were hurt. The NTSB report says after the crew activated the runway lights that are supposed to guide the planes' path ... [the report says](#) the lights shut off 3 seconds later and would not turn back on.



There were also problems with the runway itself. Although the runway passed a 2011 inspection from the Georgia Department of Transportation, it failed to meet federal standards because there were trees 200 feet to the left of the center line.

The report also found the runway didn't have a crown in the center. That's the slope that's supposed to allow water to drain to the side of the runway instead of pooling up in the middle. In some places, the report says Macon's runway had little to no slope.

The company that insured the plane in the accident filed a lawsuit against the City of Macon. It claims that despite getting several construction grants, [the city didn't keep the airport's runway up to standard](#). The suit asked the city for a 1 million dollars in damages, but it was later dismissed in March.

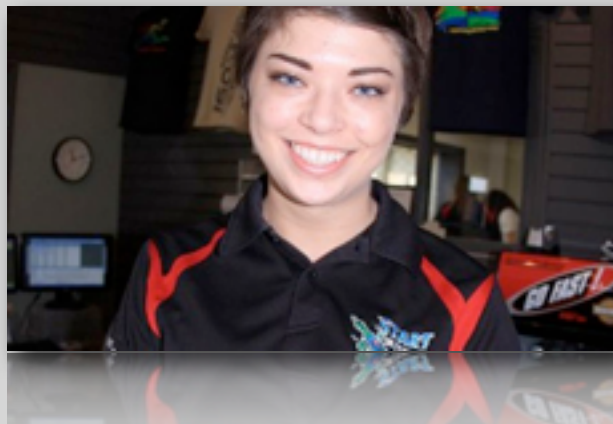
Attorney Arthur Park says they have within 6 months to decide whether to re-file the case. He says they also have the NTSB report and will look into it as they make their decision.

We also spoke with Macon-Bibb spokesman Chris Floore. He says he could not comment on the case because of the possible lawsuit.

[Ohio woman dies after accidentally walking into plane propeller](#)

A 24-year-old Ohio woman died last Tuesday from severe head injuries suffered when she walked into a spinning airplane propeller at the [skydiving business where she worked](#).

Sarah Rhoads died at a Dayton hospital, where she had been flown after Sunday's accident in the town of Middletown. Authorities said she suffered severe head injuries. She had been office manager for three years at Start Skydiving. It operates near Middletown Regional Airport.



Owner John Hart says it's the first time the business has had such an accident. He says it can be difficult to see fast-spinning propeller blades.

Hart said Rhoads was like family and called the accident the "worst nightmare of my life," WHIO.com reported.

"It's hard," he said. He told the station that [he suspects](#) she walked out to the Nouvel Air airplane to see if the pilot needed any food.

The Federal Aviation Administration says it will investigate the accident.

Gene Newsome, a manager at the business who was vacationing during the accident, described Rhoads as an [employee who "worked at 100 miles per hour."](#)

"She was awesome," he told FoxNews.com

Former Blue Angels Commander Guilty Of Misconduct

U.S. Navy Capt. Gregory [McWherter](#), who served as commanding officer of the Blue Angels for two terms between 2008 and 2012, has been found guilty of failing to follow orders and of ["conduct unbecoming of an officer"](#) for fostering a hostile command climate, [failing to stop](#) obvious and repeated instances of sexual harassment, condoning widespread lewd practices within the squadron, and engaging in inappropriate and unprofessional discussions with his junior officers, the Navy announced last Tuesday. The investigation found that McWherter witnessed, condoned and encouraged ["juvenile and sophomoric"](#) behavior that became "destructive, toxic and hostile." McWherter was given a letter of reprimand that will most [likely end his Navy career](#), officials told the Washington Post. An investigative report (PDF) by the Navy found that under McWherter's second term as commander, from May 2011 to November 2012, he encouraged the growth of a sex-obsessed environment. The pilots kept pornography in their jets, painted a giant phallus on the roof of their training trailer in California (visible in Google's satellite images), and hazed new recruits, requiring them to wear "foam penis" hats.



The pilots set up a messaging group on their smart phones and used it swap pornography and engage in "vulgar, homophobic chats." The Post described the investigation's results as revealing a "pattern of ... [unethical behavior](#) more typical of an 'Animal House' fraternity than one of the most respected units in the U.S. Navy."

<http://www.avweb.com/avwebflash/news/blue-angels.php>

FAA lab using virtual reality to improve aviation safety

Kenneth Allendoerfer donned a silly looking skullcap that had a bunch of electrodes and wires sticking out of it.

While the cap might appear funny, the information collected from its sensors actually is part of some serious research involving one of the nation's most stressful jobs — [air traffic controller](#).

Allendoerfer and other researchers work in a Federal Aviation Administration laboratory that uses virtual reality to solve conflicts between [humans and machines](#). Testing in the virtual world helps [avoid many of the mistakes](#) that accompany more traditional ways of designing and building new systems. In aviation, a mistake could come at a huge cost.



"We model fresh ideas in a virtual reality. We do it before any significant money is spent," said Dennis Jefferson, a computer scientist who oversees the lab.

The entire complex is called the Research Development and [Human Factors Laboratory](#). It is located at the FAA's William J. Hughes Technical Center 10 miles west of Atlantic City.

Step inside and you'll find a world of synthetic humans, 3-D imagery, simulated air traffic control towers, electrode-laden caps and other high-tech wizardry designed to make the nation's commercial aviation industry safer and more efficient.

"We want to make sure the [humans fit in with the technology](#)," Allendoerfer, the manager of the FAA's human factors branch, said of the overall purpose of the lab.

Virtual reality has become an important tool in the design, visualization and evaluation of complex aviation systems. Researchers stressed that airports, air traffic controllers, airlines and the flying public all have benefited from the lab, built in 1992 at a cost of \$4 million.

Greater demands are expected to be placed on aviation in coming years as the national airspace system becomes more complex. One of the lab's key research projects involves the so-called NextGen air traffic control system — the transition from the old, radar-based network to one that uses satellites to guide planes with more precision.

Digital communication will be a key piece of NextGen. It will reduce the need for time-consuming radio transmissions between air traffic controllers and flight crews. Ben Willems, an FAA engineering research psychologist, believes that digital messages will [eliminate some of the mistakes](#) between controllers and flight crews during radio communications.

“There are many places in that process when the human can make mistakes,” he said of radio transmissions.

Controllers would be able to concentrate on more of the “hard stuff” of their jobs — such as rerouting planes — if they are freed from some of the burdens of radio communications, Willems said.

According to some predictions, controllers may have to handle [three times as much airline traffic in the future](#) as they do now. Willems explained that the lab exposes controllers to a much higher workload in a simulated environment to see how they cope.

“We literally put them through the wringer,” Willems said.

The skullcap modeled by Allendoerfer, for instance, measures the electrical activity in the brain while controllers sit at simulated workstations, pretending to do their jobs. The lab also has devices to monitor a controller's heart rate and the amount of oxygen in the brain to determine the amount of stress they are under.

In most workplace surveys, air traffic controller ranks as one of the nation's most stressful jobs. Peter Dumont, president of the Air Traffic Control Association, said the FAA's virtual reality lab has proved to be an immense help to controllers. The lab's testing [“puts the human in the loop”](#) from the very beginning in the quest to develop new technology, he noted.

“Instead of trial and error in the field, they are developing it in the simulated environment,” Dumont said.

New workstations and other technology that could radically change the way controllers do their jobs are being developed at the lab. The virtual environment includes computer people that mimic real humans. These “synthetic humans” help to refine equipment and facilities before they are placed in the field.

“It’s easy to put something in a virtual environment before we put it into actual construction,” Jefferson said.

Design flaws can be eliminated during the computer simulations. The synthetic humans, nicknamed “Jack,” are equipped with high-tech gadgets to make sure workstations, consoles, desks, chairs and other furniture will fit properly for real people. For instance, Jack can use a “dynamic finger ruler,” a laser light that extends from his finger to measure the distance of an object he is reaching for.

One of the most extraordinary parts of the lab is a room that features a virtual mock-up of airport air traffic control towers. One simulation replicates the panoramic views of the Boston skyline that controllers would have from the tower at Logan International Airport. Boston landmarks, such as Fenway Park and Hancock Place, are mixed with virtual images of planes taking off and landing at Logan’s runways.

A series of computer screens stretch across the wall to create airport simulations that look like a gigantic video game. Researchers can simulate emergencies and other scenarios to watch how air traffic controllers will respond.

“From a safety point of view, you’re unlikely to make mistakes,” Allendoerfer said of the advantages of testing in the virtual world.

Mistakes made by air traffic controllers in the real world could be catastrophic. Every day they are on duty, they can have thousands of lives in their hands.

Dumont, of the Air Traffic Control Association, said the FAA lab is crucial for studying factors that affect controllers, [including their workload and how they interact with technology](#).

“It certainly is a job that carries a lot of responsibility and takes a lot of training. It is certainly considered a stressful job,” he said.

http://launch.newsinc.com/legacy-migration/embed.html?WID=14299&VID=26097600&freewheel=91757&sitection=atlanticcity_nws_us_sty_pp&height=338&width=600#ndn-widget-embed-1-player

Human Factors Division

Human Factors Newsletter # 14-08

Aircraft-Assisted Pilot Suicides in the United States, 2003-2012. (Lewis, R.J., Forster, E.M., Whinnery, J.E., Webster, N.L.)

Abstract: Aircraft-assisted suicides are tragic, intentional events that are hard to predict and difficult to prevent.

Factors involved in aircraft-assisted suicides may be depression, social relationships, and financial difficulties, just to name a few problems. Suicide attempts using an aircraft almost always result in pilot fatality. They also have the unfortunate potential to cause collateral damage to property and life.

The CAMI laboratory has been interested in epidemiological and toxicological findings from aircraft-assisted pilot suicides. Accident information and case histories were obtained from the National Transportation Safety Board (NTSB) and the FAA. Toxicological information was obtained from CAMI's Bioaeronautical Sciences Research Laboratory.



This paper is a 10-year review (2003-2012) of aircraft-assisted pilot suicides, and is a follow up to the previous 1993-2002 review. From 2003-2012, there were 2,758 fatal aviation accidents; the NTSB determined that **eight were aircraft-assisted suicides** (all involving the intentional crashing of an aircraft). This number is half of what was found in the previous 10-year review.

All pilots involved in these aircraft-assisted suicides **were male**, with a median age of 46 years (range 21-68, mean 42±16 years). The pilot was the sole occupant in seven of the eight aircraft that were intentionally crashed. Four of the eight pilots were positive for ethanol, and two of the eight were positive for Selective Serotonin Reuptake Inhibitor (SSRI) antidepressants.

Based on the limited accidents conclusively attributed to suicide, death by the intentional crashing of an aircraft is an infrequent and uncommon event and has declined compared to the previous 20 years.

For a copy of this report, please visit : http://www.faa.gov/data_research/research/med_humanfacs/oamtechreports/2010s/media/201402.pdf

This activity supports the Administrator's Strategic Initiative to Make Aviation Safer and Smarter.

Office of Aerospace Medicine

More information on human factors research can be found at the FAA Human Factors web site: www.hf.faa.gov

Paul Krois, Ph.D., PMP, Manager
Human Factors Division, NextGen ANG-C1

AAR Becomes the First MRO Operator to Sign Data-Sharing Pact with FAA

AAR, a recognized leader in aircraft maintenance, repair and overhaul (MRO), has become the first MRO operator to agree to voluntarily share safety information with the Federal Aviation Administration. AAR recently signed an agreement to take part in the [FAA's Aviation Safety Information Analysis and Sharing program \(ASIAS\)](#), which is designed to help MRO operators avoid serious and potentially costly safety issues and



the FAA to identify high-risk areas. “The FAA is very pleased to have AAR launch the ASIAS program among MROs,” said Steven Douglas, Manager, Aircraft Maintenance Division, for the FAA. “We believe that sharing and analyzing safety data are important for the aviation industry as a whole.”

Safety and performance are the cornerstones of AAR’s 1MRO Network, comprised of six aircraft maintenance facilities in Indianapolis; Oklahoma City; Miami; Duluth, Minn.; Hot Springs, Ark.; and Lake Charles, La.

“We understand that voluntary reporting is critical to overall safety in the aviation industry and are excited to partner with the FAA’s efforts,” said Art Smith, AAR Vice President and Chief Quality Officer. “Although we are now officially signed on to the ASIAS program, our customers and other partners know AAR has long had [a culture and practice of sharing safety information.](#)”

AAR has received frequent industry recognition, including earning the Diamond Award of Excellence, the FAA’s highest honor for maintenance training, for the fifth-consecutive year. AAR also was recently voted Best Airframe Provider in the Americas by industry professionals.

"Rapid Repair" Becomes Mobile with "CAIRE"

Lufthansa Technik AG has developed a procedure which should mean that [pure gluing repairs](#) to critical high-performance composite fiber structures can now be made certifiable.

Lufthansa Technik AG has developed a procedure which should mean that pure gluing repairs to **critical high-performance composite fiber structures** can now be made certifiable. With the help of a milling robot which uses special software to recognize even 3-dimensional surfaces, it is now possible for the first time to carry out **automated repairs away from maintenance sites**. In the previous research project, "Rapid Repair", Lufthansa Technik AG already successfully developed a complete process chain for the rapid, automated, reproducible repair of CFRP materials. The three year follow-on project, "Composite Adaptable Inspection and Repair" (CAIRE), has further enhanced the original stationary milling robot to allow for mobile repairs.



Speaking about the great potential of this development, "CAIRE" project manager Jan Popp of Lufthansa Technik said: "Thanks to the new robot we can even repair large surface damage on the fuselage or wing in an 'on wing' procedure. Repairs that **were barely imaginable** until very recently are now possible." The new repair procedure will primarily be used for large surfaces with monolithic and sandwich structures. Until now, damage to these skin surfaces has meant intensive diagnostics and repair work in a specialist workshop or in the field.

The new repair procedure, complete with robot, will be presented to the public for the first time at the Lufthansa Technik stand at this year's ILA Berlin Air Show.

US Air Force Seeks New Aircraft Damage Sensor

The U.S. Air Force Research Laboratory issued a \$4 million contract to Intelligent Automation Inc. (IAI) to develop an inlet and exhaust damage registration sensor for high performance aircraft.

Under the contract, IAI will develop Auto-Scan, an automated inlet and exhaust coating damage registration system that captures damage characteristics and **automatically transfers that data** to the aircraft's maintenance health assessment systems. According to the Air Force, the sensor will be designed for compatibility with military, General Aviation and commercial air transport jets.

See more at: http://www.aviationtoday.com/av/topstories/US-Air-Force-Seeks-New-Aircraft-Damage-Sensor_82328.html?hq_e=el&hq_m=2892526&hq_l=40&hq_v=e0e60a06c9#.U45bfy8iQ-U

Back-to-front boarding preferred by air passengers

The majority of travelers say they think boarding a plane from back to front would be the most efficient according to a joint survey conducted by The GO Group, LLC, an international ground transportation provider and GO Airport Express, a GO Group member company based in Chicago. More than 280 people responded to the survey, which was conducted in response to news some airlines have been testing boarding from back to front as well as outside in, with window passengers first, then middle seats then aisles. Fifty-five percent expressed the view that back-to-front would be the fastest and fairest way to board.



Some survey participants had their own suggestions, including requiring that passengers be required to store their carry-ons only in the bins directly overhead their seats. Another suggested randomized boarding so that passengers are scattered throughout the plane when storing their luggage and getting seated to reduce jams in the aisles, while one said it didn't matter much **"once the baggage wars break out."**

"While every loading system will have its challenges, passengers are clearly frustrated with the current system," says John McCarthy, president, The GO Group, LLC. "Airlines should continue to experiment and test new ways to reduce boarding time and best manage carry-on storage issues."

The GO Group, LLC is a one-stop source for shared-ride shuttles, private cars and sedans. Its members transport some 13 million passengers to and from some 66 airports in the United States, Mexico, Canada and Europe annually. One of the oldest companies in Chicago, GO Airport Express traces its founding to 1853 and the Parmelee Transportation Company, which provided a carriage service between Chicago's railroad stations and the downtown hotels.

- See more at: <http://www.traveldailynews.com/news/article/60578/back-to-front-boarding-preferred-by-air#sthash.U0vk19Ga.dpuf>

Effects of sleep deprivation equal to binge drinking or marijuana use, study shows

Pulling all-nighters is an honorary college sport — one that students may want to refrain from playing in the future.

According to a small study from the American Academy of Sleep, the effects of poor sleep can result in academic failures — poor grades, withdrawal from class, etc. — equal to that of students who binge drink or use marijuana.



A lack of sleep can result in various side effects, **which differs from person to person**. “Generally, my body feels sore when I do not get enough sleep. During such times, I feel like taking an ice bath to force my body to feel awake and refreshed,” says Anna Gragert, a sophomore business administration major at State University of New York at New Paltz. “I have trouble remembering things and keeping up with everything. Sometimes, I even get chest pains or stomach pains when I lose enough sleep.”

The American College Health Association’s National College Health Assessment analyzed the sleep data of 43,000 students to determine the effects of sleep on academic performance.

The researchers made adjustments in the data, specifically when students reported any sort of mental health concerns like depression, which on their own can cause difficulties in the classroom and beyond.

But do students who have trouble sleeping actually feel as bad or worse than students who binge drink or smoke marijuana?

“In acceptable amounts, I feel better after drinking. Running on little to no sleep is a different story; I would much prefer a wicked hangover than the lack of sleep feeling,” says Trish Reznick, a junior mass communications major at York College of Pennsylvania.

Roxanne Prichard, Ph.D., associate professor of psychology at the University of St. Thomas in St. Paul, Minn., told the Huffington Post that, while most students don’t have clinical sleep disorders, 60% of students report having some sort of difficulty sleeping.

“I have a sleeping problem in the sense that I don’t sleep enough or well enough,” says Jennifer Clark, a junior computer technology design major at Arcadia University.

“I’m beginning to find the less sleep I get the harder it is for me to get out of bed in the morning. I used to be able to get up with the alarm, now I hit snooze and it takes me like a half hour to actually get up,” she adds.

Institutions of higher education have not traditionally allocated any funds or activities to discussing or assisting students who have trouble getting enough sleep, which differs greatly from the massive amount of programming provided to combat alcohol and drug-use.

One school that has [made sleep a priority](#) is the University of Michigan, which recently made the news for a new addition to their campus —napping stations. Sleep deprived students now have a resource for rest that provides students with a way to cope with stress while giving them a moment to relax.

A lack of sleep can also make students more overwhelmed than they already are.

“When I do have trouble sleeping, I feel stressed because the longer I am laying there without falling asleep, the more time I have to stress over things I haven’t given a thought to during the day. My body feels uncomfortable, like I feel the need to move every second,” admits Anouchka Kibora, a sophomore International Studies major at Arcadia University.

Among all grade levels, freshmen are most heavily affected by lack of sleep. According to the study, one of the biggest causes of this is their age, which biologically makes freshmen more inclined to stay up really late.

Health in-take forms do not always have spaces for students to report on their sleep, which is potentially a big miss for student health & wellness centers. Prichard adds to this, explaining that many other issues like a student's mental health can be strongly affected by the amount of sleep a student is getting.

"When I have trouble sleeping, I feel like I am on 'auto-pilot', my anxiety is through the roof and I question my every little decision," says Reznick.

[Hitting the hay is more important than ever](#), not only for one's health, but also for one's academics. The study and its research will be presented at SLEEP 2014, the 28th annual gathering of the Associated Professional Sleep Societies.

<http://www.aasmnet.org/articles.aspx?id=4780>

<http://www.aasmnet.org/>

<http://www.acha-ncha.org/overview.html>

<http://college.usatoday.com/2014/05/29/university-of-michigan-offers-napping-stations-to-sleep-deprived-students/>

<http://www.aasmnet.org/articles.aspx?id=4780>

Regular exercise changes the brain to improve memory, thinking skills

There are plenty of good reasons to be physically active. Big ones include reducing the odds of developing heart disease, stroke, and diabetes. Maybe you want to lose weight, lower your blood pressure, prevent depression, or just look better. [Here's another one](#), which especially applies to those of us (including me) experiencing the brain fog that comes with age: exercise changes the brain in ways that protect memory and thinking skills.

In a study done at the University of British Columbia, researchers found that regular aerobic exercise, the kind that gets your heart and your sweat glands pumping, appears to boost the size of the hippocampus, [the brain area involved in verbal memory and learning](#).

Resistance training, balance and muscle toning exercises did not have the same results. The finding comes at a critical time. Researchers say one new case of dementia is detected every four seconds globally. They estimate that by the year 2050, more than **115 million people will have dementia worldwide.**



Exercise and the brain

As I write in the May 2014 Harvard Health Letter, exercise helps memory and thinking through both direct and indirect means. The benefits of exercise come directly from its ability to reduce insulin resistance, reduce inflammation, and stimulate the release of growth factors—chemicals in the brain that affect the health of brain cells, the growth of new blood vessels in the brain, and even the abundance and survival of new brain cells.

Indirectly, exercise improves mood and sleep, and reduces stress and anxiety. Problems in these areas frequently cause or contribute to cognitive impairment.

Many studies have suggested that the parts of the brain that control thinking and memory (the prefrontal cortex and medial temporal cortex) have greater volume in people who exercise versus people who don't. "Even more exciting is the finding that engaging in a program of regular exercise of moderate intensity over six months or a year is associated with an increase in the volume of selected brain regions," says Dr. Scott McGinnis, a neurologist at Brigham and Women's Hospital and an instructor in neurology at Harvard Medical School.

Put it to the test

So what should you do? Start exercising! We don't know exactly which exercise is best. Almost all of the research has looked at walking, including the latest study. "It's likely that other forms of aerobic exercise that get your heart pumping might yield similar benefits," says Dr. McGinnis.

How much exercise is required? The study participants walked briskly for one hour, twice a week. That's 120 minutes of moderate intensity exercise a week. Standard recommendations advise half an hour of moderate physical activity most days of the week, or 150 minutes a week. If that seems daunting, start with a few minutes a day, and increase the amount you exercise by five or 10 minutes every week until you reach your goal.

If you don't want to walk, consider other moderate-intensity exercises, such as swimming, stair climbing, tennis, squash, or dancing. Don't forget that household activities can count as well, such as intense floor mopping, raking leaves, or anything that gets your heart pumping so much that you break out in a light sweat.

Don't have the discipline to do it on your own? Try any or all of these ideas:

- Join a class or work out with a friend who'll hold you accountable.
- Track your progress, which encourages you to reach a goal.
- If you're able, hire a personal trainer. (Paying an expert is good motivation.)

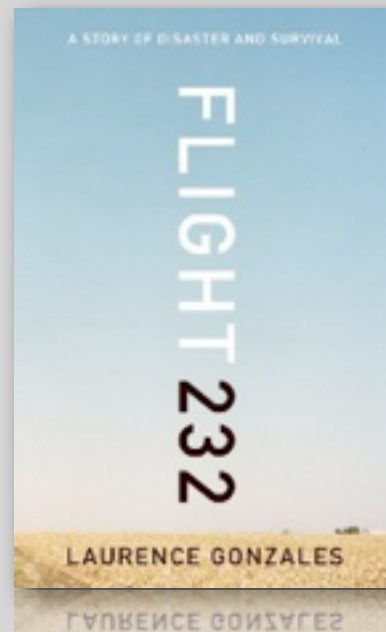
Whatever exercise and motivators you choose, commit to establishing exercise as a habit, almost like taking a prescription medication. After all, they say that exercise is medicine, and that can go on the top of anyone's list of reasons to work out.

The results were [published this week in the *British Journal of Sports Medicine*](#).

Flight 232: A Story of Disaster and Survival

Twenty-five years after the catastrophe, a dramatic and extraordinarily rare 360-degree view of the crash of a fully loaded jumbo jet.

As hundreds of rescue workers waited on the ground, United Airlines Flight 232 wallowed drunkenly over the bluffs northwest of Sioux City. The plane slammed onto the runway and burst into a vast fireball. The rescuers didn't move at first: nobody could possibly survive that crash. And [then people began emerging from the summer corn](#) that lined the runways. Miraculously, 184 of 296 passengers lived. No one has ever attempted the complete reconstruction of a crash of this magnitude. Drawing on interviews with hundreds of survivors, crew, and airport and rescue personnel, Laurence Gonzales, a commercial pilot himself, captures, minute by minute, the harrowing journey of pilots flying a plane with no controls and flight attendants keeping their calm in the face of certain death. He plumbs the hearts and minds of passengers as they pray, bargain with God, plot their strategies for survival, and [sacrifice themselves to save others](#).



Ultimately he takes us, step by step, through the gripping scientific detective work in super-secret labs to dive into the heart of a [flaw smaller than a grain of rice](#) that shows what brought the aircraft down.

Inspiration

WWII hero undertakes another mission



Three days a week, 90-year-old Ernie Andrus puts on his support stockings and tennis shoes, gently lowers himself out of the RV, and slowly returns to his mission. Andrus is running across the U.S. [to raise awareness](#) for the ship he served on in World War II. Steve Hartman reports.

<http://www.cbsnews.com/videos/wwii-hero-undertakes-another-mission/>



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Dear Fellow Aviation Member;

System Safety Services is in the process of developing a set of twelve **“Safety Management System”** (“SMS”) Awareness Safety Posters. These posters have been designed to:

- a) educate the reader on just what SMS is and what their role is in the system;
- b) assist them in maintaining awareness of their role in SMS.

The Posters will contain a full color **“attention-getter”** cartoon (see back for samples) as well as a synopsis of the subject.

The cost to develop and produce 1,000 sets of posters (12,000 total) is expensive so as with the previous poster sets, we are seeking Safety minded sponsors to help defray the cost.

In appreciation you will receive:

1. Your logo prominently displayed on the bottom of each of the 100 lb. glossy 18” x 24” posters under the heading: *“In the interest of Aviation Safety, the following have generously provided funding to make these Safety posters possible”*;
2. Each sponsor will receive sets of these Safety posters depending on the class of sponsorship and will be entitled to a discount on future poster purchases (5, 10 & 15% respectively);
3. Each sponsor will be entitled to receive a similar discount on any of our Safety products.

All future printings will continue to display your logo at no additional cost

Over 5,000 sets of the **“Maintenance”, “Flight Crew” and “Ground Crew” Dirty Dozen Safety posters** have been printed to date and I expect the SMS Safety posters to be a useful a tool in reducing human error.

The cost to sponsor the SMS posters is as follows:

Gold Sponsor: \$1,500 – receive **15** sets of posters, logo on the top row, **15%** discount

Silver Sponsor: \$1,000 – receive **10** sets of posters, logo on the middle row, **10%** discount

Bronze Sponsor: \$500 – receive **5** sets of posters, logo on the bottom row, **5%** discount

Your assistance in making our industry just a little Safer is greatly appreciated..

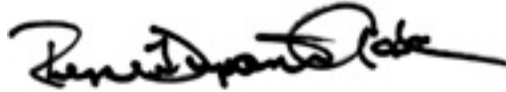
If there are any questions regarding these posters or any of our products, please do not hesitate to contact us.

We, _____ will be pleased to pledge _____ toward the printing of the new posters.

Contact _____ at _____ for details re logo & payment.

Sorry, but we _____ are unable to assist at this time but would be interested in purchasing a set of the posters when published.

On behalf of System Safety Services, thank you for your consideration.



Gordon Dupont, CEO

Renee Dupont-Adam President

Click onto this email address to view enlargements of each SMS poster.

http://www.system-safety.com/ourservices/sms_posters.html

Draft SMS Awareness Safety Posters

 <p style="text-align: center; font-weight: bold; color: red;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: blue;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: yellow;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: green;">Company Layer One</p>
#1 Safety Culture	#2 Gap Analysis	#3 What Hazard?	#4 Why Report?
 <p style="text-align: center; font-weight: bold; color: red;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: blue;">Coordinating Layer One</p>	 <p style="text-align: center; font-weight: bold; color: yellow;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: green;">Spawning Company Layer One</p>
#5 What Report?	#6 Incident Investigation	#7 HF Training	#8 Misfortune Murphy Model
 <p style="text-align: center; font-weight: bold; color: red;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: blue;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: yellow;">Spawning Company Layer One</p>	 <p style="text-align: center; font-weight: bold; color: green;">Spawning Company Layer One</p>
#9 Risk Assessment	#10 Risk Analysis Matrix	#11 Risk Tolerance	#12 Feedback

System Safety Services
 dupontg@system-safety.com
 604 526-3993

Final print size
18" X 24"